REMARKS/ARGUMENTS

Introductory Remarks:

Claims 1-33 had been made subject to a Restriction Requirement in the parent case. After election by Applicant (with traverse), claims 1-15 and 17-33 were rejected by the Examiner. The present Continuation case is meant to include some of the amendments which had not been entered in the parent case, along with adding new claims. In general, all of the new subject matter is supported by the specification, and should not raise any new issues. The undersigned also notes that some changes were made to improve overall "readability". For example, the somewhat awkward phrase "the one or more" has been changed to omit the last 3 words, in various claims. It should be understood, however, that Applicant still intends the claim to include embodiments in which more than one monomer or oligomer could be present.

The undersigned and the Examiner discussed some of the key issues (October 14) in regard to this case, and also briefly reviewed a set of informal claims proffered by Applicant. Although no agreement was reached in regard to any of the claims, the opportunity to discuss these issues was greatly appreciated. Most of the changes made herein are based on the claims discussed with the Examiner.

Applicant continues to maintain that the compositions and articles recited in the claims during previous communications with the Patent Office are patentable over the prior art. However, there is a desire at this time to reduce issues present in this prosecution. Thus, substantially all article and composition claims (i.e., with the exception of a product-by-process claim) have been canceled in this Action.

The claims are canceled without prejudice, and Applicant reserves the right to prosecute those claims in a related case at an appropriate time.

The remaining claims relate to a process for the formation of a ceramic core, utilizing the silicone/ceramic system recited in claim 34. There has been quite a bit of previous discussion on the silicone composition itself. Therefore, specific details regarding that composition should not be necessary at the present time.

At the risk of being repetitive, Applicant does want to again emphasize that the "core", which is the focus of many of these claims, has a very specific, defined shape which will define the interior regions of the cast article. Thus, by themselves, the cores should be deemed to have all of the patentable attributes of any other article, such as the casting molds.

The quality of the core is critical to the formation of sophisticated, high-temperature articles, such as gas turbine blades and nozzles made from superalloys. The dimensions of the core must be extremely precise, so that the interior features of a turbine blade are also precise. Moreover, the core must have the strength to survive very high-temperature processes, like casting, molding, and the like, but which must also be "crushable" and easily removable after serving its function. The core must also exhibit a char yield high enough to minimize shrinkage.

As Applicant has emphasized previously, the material forming the core must be highly amenable to certain forming processes, like extrusion, injection molding, and the like. It is often extremely preferable that these types of materials initially have a very low viscosity. (See paragraph 37 of the specification, for

example). However, after being polymerized and/or cross-linked, the resulting "green" products need to exhibit high strength and toughness. Moreover, the material needs to be able to "grow" in molecular weight after it is formed into the core-shape, i.e., at a point where viscosity is no longer an issue.

As also described previously, the prior art had struggled in the search for a silicone material which has a liquid-like viscosity required for molding, but which can be polymerized into a firm, strong green body, and then fired into a part which exhibits minimal shrinkage. The materials recited in some of the pending process claims represent one key discovery of that search. As discussed in previous prosecution, these materials are provided with a high degree of reactivity, i.e., via certain alkenyl- and hydride-functional groups. However, the materials – in the form of the desired ceramic slurry – exhibit a relatively low viscosity, as recited in claim 34. All of these properties are uniquely directed to the recited methods for forming the ceramic cores.

Three references were cited in the parent case: U.S. 4,269,753 ("Mine"); W. Atwell et al, U.S. 4,888,376 ("Atwell"); and Schilling, Jr. et al, U.S. Patent 5,162,480 ("Schilling"). While some of the issues may be different in scope and kind in the current prosecution, Applicant emphasizes that these references – collectively or individually – fail to disclose or suggest the currently-recited process for making a ceramic core. In addition to the absence of key process steps set forth in the claims, the references are too far removed from the specific problems addressed by the present invention, and discussed previously (as well as in the specification).

Applicant also notes that claims 38-40 recite the use of at least one solvent in the described process. For some embodiments, the use of a solvent, and its removal, have particular advantages. They are described, for example, in paragraphs 39 and 45 of the specification.

In other embodiments, e.g., in amended claim 19, solvents are purposefully excluded. As described in the specification, e.g., in paragraph 37, the use of a solvent-free ceramic slurry can facilitate the use of the ceramic-silicone system in conventional molds. (The silicone fluid, with its low viscosity, can often function as the vehicle for the ceramic powder).

As both Applicant and the Examiner understand, additional references may be relevant to the claims, as they have been amended here. Thus, a full review of the claims relative to the current references – and prior to further search and examination - might not be useful at this time. However, Applicant does feel justified in speculating that any combination of references uncovered and applied in future prosecution will not suggest the specific process steps recited in the amended claims, including the specified materials employed in those steps. In addition to the claims noted above, Applicant makes this comment in regard to the use of the ceramic core in the important turbine fabrication embodiments of claims 35-37.

Applicant appreciates the opportunity to present these claims at the present time. The undersigned would be interested in discussing any remaining issues with the Examiner, if an interview might resolve those issues.

Please charge all applicable fees associated with the submittal of this Response and any other fees applicable to this application to the Assignee's Deposit Account No. 07-0868.

Respectfully submitted,

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